

COMPLETE LIST OF CLAIMS:

- 1 1. (Original) A microfluidic structure, comprising:
 - 2 (a) a first body which has a first planar surface that contains at least one
 - 3 recessed area to define a least one microfluidic channel, wherein the first planar surface
 - 4 has a surface roughness or less than 0.5 μm ; and
 - 5 (b) a second body which has a second planar surface which is a sensing
 - 6 surface, wherein said first surface and said second surface are in contact;
 - 7 (c) whereby at least one microfluidic sensor channel is formed.

- 1 2. (Original) The structure of claim 1, wherein either the first body or the second
- 2 body contains at least one pair of inlet/outlet holes to allow for a sample to enter and exit
- 3 said at least one microfluidic channel and contact said sensing surface.

- 1 3. (Original) The structure of claim 1, wherein the contact of said first surface
- 2 and said second surface of (c) of claim 1 is reversible

- 1 4. (Original) The structure of claim 3, wherein the first body dimensions hold to
- 2 a tolerance of $\pm 1 \mu\text{m}$ for repeated sealing where the applied load is 200 to 5000 psi.

- 1 5. (Original) The structure of claim 1, wherein the material of the body at the first
- 2 surface has a hardness of at least D50 as measured by the Shore D method.

- 1 6. (Original) The structure of claim 1, wherein the body is made of carbon-filled
- 2 PEEK at the first surface.

1 7. (Original) The structure of claim 1, wherein the first body material adsorbs
2 less than 0.1% water when immersed for 24 hours at 25 degrees Celsius.

1 8. (Original) The structure of claim 1, wherein the first body material adsorbs at
2 least 80% of light at incident angles from 50° to 80° when the light has a wavelength
3 from 400 nm to 1100 nm.

1 9. (Original) The structure of claim 1, wherein the first body material in contact
2 with a liquid phase leaches residues or particulates to a concentration less than
3 2pg/mm²/min.

1 10. (Original) The structure of claim 1, wherein there are three microfluidic
2 channels with each channel roughly 300 μm wide, 5mm long, and 30 μm high.

1 11. (Original) The structure of claim 1, wherein there are a plurality of
2 microfluidic channels.

 12. (Cancelled)

1 13. (Original) A microfluidic sensor component, comprising:

2 (a) a body with a first planar surface that contains at least one recessed area to
3 define at least one microfluidic channel, wherein the body at said first planar surface has
4 a hardness of at least D50 as measured by Shore Durometer type D;

5 (b) whereby said first surface in contact with a second planar surface which is a
6 sensing surface forms at least one microfluidic sensor channel.

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1 14. (Original) The component of claim 13, wherein said first planer surface has
2 a surface roughness of less than 0.5 μm rms..

1 15. (Original) The component of claim 13, wherein the body contains at least
2 one pair of inlet/outlet holes to said at least one recessed area whereby a sample may
3 enter and exit said at least one microfluidic channel and contact said sensing surface.